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ABSTRACT

An understanding of how children interact with reading material in educational settings is crucial to the understanding of successes and failures in teaching children to become skilled readers. This report describes the development of a plan for observing, describing, and coding reading activities in a representative sample of classrooms. The observational system was intended to provide a unified, information-rich description of classroom reading activities and reading materials. A preliminary analysis was made of changes that might be expected in reading activities and materials between the lower (kindergarten through third) and middle (fourth through eighth) grades. The feasibility of detecting such changes in a corpus of coded observations was considered. After weighing the costs and benefits of collecting a representative corpus, it was concluded that current needs, both theoretical and applied, might be better served by small studies that focus on specific questions. (Author/AA)

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CENTER FOR THE STUDY OF READING

Technical Report No. 30

PROCEDURES FOR SAMPLING TEXTS AND TASKS IN KINDERGARTEN THROUGH EIGHTH GRADE

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Abstract

An understanding of how children interact with reading material in educational settings is crucial to an understanding of our successes and failures at teaching children to become skilled readers. A possible first step in attaining this knowledge is the collection of a corpus obtained by the systematic observation, description, and coding of reading activities in a sample of classrooms. In the present report we relate the development of a plan for collecting such a corpus, including a system for coding observation, procedures for sampling classrooms, and methods for indexing and accessing the corpus. Special emphasis is given to the development of the observational system. This system is intended to provide a unified, information-rich description of classroom reading activities and the reading materials involved. We have made a preliminary analysis of the changes in reading activities and reading materials which might be expected to occur between the lower (K-3) and middle (4-8) grades, and considered the feasibility of detecting such changes in a corpus of coded observations. Finally, after weighing the costs and benefits of collecting a representative corpus, we concluded that current needs, both theoretical and applied, might be better served by small studies focused on specific questions.

From its conception, the Center for the Study of Reading has been charged with spearheading a broadly based, multifaceted attack on the problem of the development of skilled reading. One aspect of this mandate was to develop a plan for sampling the written discourse which children experience in the early and middle grades together with the different types of tasks associated with the discourse. In this report, we outline the development of an observational system which was designed for the collection of such a sample. We wish to stress at the outset that our major responsibility was the development and evaluation of a plan for sampling texts and tasks. Thus, the observational system described in this report is not a fully developed instrument. We have, however, listed changes and modifications which would be required before implementation. We discuss how the sample might be collected, compiled, and analyzed in order to detect changes in texts and tasks between the early and middle grades. Finally, we consider alternatives to our observational system and conclude that reading research would be better served by small studies focused on particular questions than by an omnibus sample of texts and tasks.

We began with the intention of developing both observational and survey methods of sampling texts and tasks. However, as we came to a fuller understanding of the issues, we realized that the level of detail necessary and the diversity of texts and tasks to be found in the schools would make the use of survey methods impractical. We have therefore concentrated most of our efforts on the development and testing of an observational system. In this paper we recount this development, from

an initial search of existing literatures through two major stages of pilot testing and revision of the observation form to the current form. The current form is described in some detail. This form codes observations by the selection of an item from a list of permissible entries for a number of categories, each of which specifies an important element of the description (e.g. Actor, Does, Type of Material). Examples are given to illustrate the form, some sample observations are presented, and techniques for the analysis of observational data are discussed. The collection of a large data base is considered, together with an examination of the uses which it might serve. Finally, modifications of and alternatives to the observation system are examined.

A Review of the Literature on Texts and Reading Tasks

The first order of business was a search of the literature for relevant previous work. We began with an examination of procedures used in the collection of previous large text samples. Carroll, Davis, and Richman (1971) compiled a large sample of the reading material used in schools in grades 3 to 9 in order to develop a word frequency count and a citation base for The American Heritage School Dictionary. A questionnaire was developed around 22 categories (fiction; nonfiction, and references), a magazine category, a religion category, and seventeen content area categories (e.g., social studies, social studies supplementary, shop). A questionnaire asked the respondent to list the "text-books, individual study and practice materials, library books, and other reading matter most commonly used in your grades 3 through 9" (p. XIV). This

questionnaire was mailed to the highest administrative officer in each of 220 school districts who could delegate responsibility for filling out the questionnaire at his or her discretion. The questionnaire responses netted a total of 6,162 different titles. Of these, the most frequently cited texts in each category were selected by a complex set of rules and constraints, yielding a total of 998 texts from which 500 word samples were drawn for the word frequency count.

The Carroll et al. sample does not satisfy all of our requirements. First of all, the sample is by now somewhat dated, since the survey on which it was based was conducted in 1969. The main drawback, however, is that it contains no information about how the texts were used, whereas we are interested in sampling texts together with the activities and contexts in which they are used. Furthermore, by prescribing the list of categories and by limiting consideration to published materials which could be identified by title, these investigators restricted the types of reading material which are included in their sample.

The second sample we examined was collected by Hanson and Hesse (1974), who developed procedures for use on a school system level. Using a "brain-storming" technique, approximately 30 people produced a list of over 200 discrete types of available reading materials. These types were classified into 60 categories (e.g. road maps, magazines, science textbooks) in 10 domains (e.g. leisure-time, textbooks). An index of societal expectations of which categories and domains of material are appropriate at each grade level as determined by the materials to which students were exposed, was determined by questionnaire data from 60 teachers and central office

administrators. Categories and domains were assigned to three grade ranges: 4-7, 7-10, and 10-12. The corpus of reading materials was selected by applying decision rules within categories and domains. For example, for reference books the selection method was:

> Ask Mrs. Beckwith (IMC Coordinator) to name five essential reference books (except dictionary or encyclopedia) which an elementary school, a middle school, and a high school each should have. Randomly select two pages from each identified book. Select the beginning of a topic closest to the page randomly identified and xerox that page. (p. 28)

Again, no information about the contexts in which the materials occurred or about how they were used was obtained.

The final sample which came to our attention was that being conducted by the Educational Products Information Exchange (EPIE). EPIE has instituted a national study on the nature and quality of instructional materials. They are compiling and disseminating information about the classroom use and teacher evaluation of instructional materials, equipment, and systems with the expressed purpose of aiding schools make decisions about the purchase of such materials. Although most of the data has been gathered by survey, observations and interviews have been collected in 150 classrooms. Lists of the most frequently used titles have been compiled. Once again, a detailed account of the activities in which these materials were employed is absent.

We next turned our attention to the reading activity literature. After consulting with a number of people in a number of areas of reading research and instruction, we instigated an ERIC (Educational Resources Information Clearinghouse) computerized literature search. This search

turned up about 150 citations of journal articles, books, technical reports, and other documents.

Articles and books which address themselves directly to the subject of reading tasks or activities seem to fall roughly into four categories. The first category might be described as "reading activities to motivate the student." An example of this type of work is Reading Activities in the Content Areas (Piercey, 1976). Piercey includes chapters for most subject matter areas (mathematics, history, shop, etc.) and describes games and activities such as crossword puzzles and team quiz games to familiarize students with the vocabulary of a content area. Although books in this category discuss a wide variety of reading tasks, they make no attempt at a comprehensive or systematic coverage of the possible range of reading tasks in which students might engage.

Articles in the second category, though not truly systematic, do make an attempt to be more comprehensive in their discussion of reading. These articles describe broad categories of reading skills such as reading readiness, decoding, and comprehension. Frommer (1971), in an article on rapid reading, provides a typical instance of this category. He lists orientation, selection, clarification, arrangment, review, and study as the components of rapid reading. Even though these components are discussed at length, they are not defined in such a way as to be observable in the classroom. Similarly, it is questionable whether any empirical support could be obtained for the existence of the hypothetical components advanced in these papers as distinct reading skills.

The third category of articles includes those which describe taxonomies of reading activities or skills. One classification that has received considerable attention is Barrett's taxonomy (Smith & Barrett, 1974). Barrett lists four main categories of reading comprehension: (1) Literal recognition or recall, (2) Inference, (3) Evaluation and (4) Appreciation. Each of these areas is further divided into four to eight sub-categories and examples of each subcategory are given. Although the taxonomy seems to cover a broad range of reading tasks, Barrett states that it is not intended to be exhaustive. The intention of these taxonomies is to describe what the author feels should be a part of a reading program. We fear that many activities that are a part of reading programs are neglected.

The fourth category of articles consider specific reading tasks that are observed in the classroom. However each article tends to focus on a small set of activities related to some single objective. For example, Gerhard (1975) believes that "grouping of ideas" is a necessary component of comprehension. To this end he lists categorizing skills, translating categories into paragraphs, organizing items within paragraphs, and other similar skills which are intended to teach students how to group ideas and thereby improve comprehension. It is not clear that the functions listed in these articles are discrete, observable tasks, but, in any case, they do not begin to exhaust the range of reading tasks which occur in classrooms.

We also examined several teacher's guides and content texts in order to learn the sorts of activities designed for use with those

texts. We determined that although these sources reveal what, according to the text authors, teachers should do, they do not tell what teachers do do. Certainly the experience judgement, and creativity of the individual teacher, the number and nature of the students, and the physical and temporal constraints of the classroom and school year play a more crucial role in determining the activities which occur in a particular classroom than the presumptions in teachers guides.

In summary, we found that the research and practical literature on reading activities presented what researchers and programs authors think should be used by teachers in classrooms or what they observed about a narrow-range of activities, not a well-documented and broadly-based description of reading activities that actually do occur in a range of classrooms, kindergarten through eighth grade.

Our search did, however, turn up two projects which are directly relevant to our work: the Educational Testing Service survey of compensatory reading programs (Rubin, Treisman, Wilden, & Yates, 1973), and the Reading and Mathematics Observation System (RAMOS) developed by Calfee and his colleagues (Calfee & Hoover, 1974, 1975). A discussion of RAMOS will be deferred until our observation system has been presented, so that the two can be compared and contrasted. We will discuss Rubin et al. here.

The first phase of the Compensatory Reading Study consisted of a questionnaire survey of a sample of 731 schools in the United States.

The focus of the study was compensatory reading programs in grades 2, 4, and 6, where compensatory reading was defined as "any reading instruction provided to the students because they are reading below their grade level" (p. 2). The principals of each participating school (585 responded at least partially) were left to decide if any of the reading instruction in his/her school met this definition.

Each school in the sample received three types of questionnaires: a School Principal Questionnaire, which pertained to the school as a whole, and a Teacher Characteristics Questionnaire and Class and Program Characteristics Questionnaire for each classroom.

The Class and Program Questionnaire is of particular interest to us. It included questions about the duration and frequency of periods of formal reading instruction, about the size and makeup of groups of students for instruction, and about the goals and success of instruction. Several questions addressed the reading materials used in class, including the rated frequency of use of different types of materials (e.g., textbooks other than basal readers; newspapers, magazines, and other periodicals; games, puzzles, and toys), and the publisher and title of the reading programs used, as well as the extent of their use. The teachers were asked to note the importance of and amount of time spent in different reading activities. The value of the information gathered is somewhat limited, however, because: 1) only reading series were identified by title; other materials could not be identified and obtained for further analysis, 2) the activity types identified in the questionnaire (e.g. improving

motor abilities related to reading, increasing attention span, developing visual discrimination) were closer to instructional objectives than to the descriptions of actual classroom events, 3) there was no attempt at integrating the information about materials with the information about activities.

Development of the Observation System

Our perception of our task and our examination of the existing literature convinced us that the development of new procedures for the sampling of tasks and texts was required. As we began to consider the job confronting us, we made two decisions which directed the course of our work during the subsequent months:

1. That we propose a single, integrated sample of texts and tasks.
2. That we would focus exclusively on reading in school, in the grades K-8.

The first of these decisions reflects the belief that a meaningful analysis of texts and tasks is impossible if each is treated as if it were unrelated to the other. The second reflects a desire to carve out a manageable, finite problem.

As we began to discuss, with colleagues and teachers, the development of procedures for sampling tasks and texts, we found ourselves hampered in our thinking and our attempts to communicate with others by confusion over the expression "reading task ." A common interpretation of "reading tasks," which we soon rejected, is reading tasks as reading skills and/or instructional objectives. Some other

possible interpretations, with examples, are:

A. Teacher's Purpose

1. Teach geography
2. Teach reading (decoding, literal comprehension, etc.)
3. Keep children busy and out of his or her hair.

B. Activities Planned (Intended) by Teacher

1. Children will do workbook exercise matching countries with their principal exports.
2. Children will read stories aloud to class.
3. Children will read or look through magazines and comic books.

C. Teacher's Instructions to Initiate Activity

1. "Take out your social studies workbook and do pages 45-48," or "For tomorrow, I'd like you to do pages 45-48 in your social studies workbook."

2. "OK, now we're going to all take turns reading out loud from our purple storybook. Tracy, why don't you go first and read the one ..."

3. "You've been such good students this morning, that we'll just take 20 minutes out to look at magazines."

D. Child's Perception of Instruction, Activities, and Purposes

(which may or may not match A, B, and C)

E. What the Student Does

(which will be jointly determined by D and by what the student wants to do, variously weighted)

1. Student does the workbook exercise
2. Student reads aloud or listens.
3. Student looks at magazines.

F. Detailed Sequence of a Child's Behavior

1. Student reads the workbook instructions, reads the first exercise but is unable to determine how to answer the question, goes back to the instructions and rereads them ...

2. Student reads story aloud until he or she comes to a word which he or she doesn't know, pauses, attempts to sound out the word, ...

3. Student leafs through Newsweek, stops to examine a picture of a foreign diplomat , begins to read the picture caption, ...

We decided that our primary responsibility was to develop and evaluate methods for observing and recording 1) the types of activities (E above) in which children participate in lessons designed to teach reading skills, in other lessons which involve or are directly related to teach reading skills, in other lessons which involve or are directly related to reading, in recreational reading, and in reading for information, for example, reading about upcoming school events, together with 2) the reading materials which are employed in these activities. (We decided at the outset to ignore disruptive behavior and activities unrelated to reading.) Our goal was to characterize those classroom activities in which children are on task and actually engaged in reading or in activities that lead into or follow reading.

As a result of conversations with teachers and with the Reading Center staff, we abandoned the use of the word task in favor of the word activity. The phrase reading activity seems to capture the sense of reading task upon which we had settled and to avoid some of the ambiguity of the term task. For similar reasons, the phrase reading materials replaced the word texts in our descriptive vocabulary.

To begin to assess the nature and range of reading activities and materials which such a sample would be likely to uncover, we asked

a group of teachers to list the activities and materials which their students had used in class the previous day. As part of a presentation for an inservice day at the Washington School in Champaign, Illinois we grouped the teachers by grade level and had each group generate a list of activities and materials. Examination of these lists convinced us that we could indeed expect to observe a broad range of activities in the classrooms we visited.

Most of our efforts to date have been spent in the development, piloting, revision, and refinement of an observation procedure. Our first round of observation grew out of the inservice day at Washington School. During the first two weeks of October, four observers spent a total of about 30 hours in Washington School, writing prose descriptions of the reading activities and materials they observed. An example of these observations is shown in Appendix A. These observations served as an initial data base which we examined in order to refine our notion of reading activities. The need for a more systematic method of recording observations was evident and became our major goal. One of the standards against which any proposed observation system was tested was that it be able to handle the activities described in this initial set of observations.

The first major step in the development of the current form was the decision to code an activity by assigning a specific value to each of a number of columns, where each column represented some element of an activity description. In this manner, the observation form is

rather like a case grammar, or frame system; the observer instantiates the cases or fills the slots by choosing one entry from each of several columns. The activity is described by the ordered combination of all the specified column values. The observation form which evolved is shown in Figure 1. This form is quite similar to the current form, which is described in detail below. We will not deal with it at length here.

Insert Fig. 1 about here

Four of us including two of the graduate students who had been observing classrooms in Champaign and Urbana schools went to Dayton, Ohio and spent approximately two and a half days (about 50 hours total) observing classrooms in five Dayton schools.

A sample protocol is shown in Appendix B. As a result of this tryout and the discussions we had during that period, it was decided that greater flexibility and ease of reporting would result if we had a form that had, instead of separate columns for the initiator and responder, a single column in which we would name the person or persons performing the action. We had found the Initiator and Responder and the following Level of Text columns for each cumbersome and frequently redundant. The procedure was also rather unsatisfactory for describing events for which there was no responder.

By dropping the Initiator and Responder columns, and replacing them with a single, Actor column, and then dropping the second Level

of Text column (which had followed the Responder column), we found that we could substitute other column titles which would permit us to more fully describe the text or other material that was being used in the event being observed.

The Current Observation Form

The form has been designed to provide enough structure to make the information we get readily classifiable, yet to be flexible enough to be applicable to a wide range of classroom activities. Seven of the ten columns on the form have lists of admissible entries. These lists are meant to be suggestive of what the observer can enter, but the lists are not exhaustive. The observer can substitute new descriptive words if the language available in the lists does not describe what s/he is observing.

We have deliberately separated the observation and classification phases of the procedure. It is our intention that an observer using the form in a classroom will use language that is as close to the event being observed as possible, and reserve the classification of what is being observed as a separate operation. Since the uses to which the data might be put are not clear, we felt it was best to record as much specific information as possible. In addition, the periods we have spent in classrooms making observations have convinced us that an observer has enough to do to record what is going on without having to make high-level decisions about the classification of the events being observed.

The easiest situation in which to record is a teacher-directed classroom, one in which the teacher spends most of his or her time teaching the entire class. We discovered, however, that even in the busiest and most confusing of classrooms (in which several activities are occurring simultaneously), it was possible to record these constantly shifting activities on the form. In a classroom in which the teacher is teaching the entire class, the observer sits so that he or she can see both the teacher and at least some of the students. The observer should be close enough to the students and the teacher so that what they are doing can be seen and heard. In a classroom in which there are several activities occurring simultaneously, the observer starts by watching the teacher and the student or group he or she is working with, recording that activity, and then walking around the room and observing and recording the activities or other groups or individual students. When the teacher shifts to another student or group, the observer records what is happening there, and then returns to the students in the rest of the classroom to record any change of activity.

Since a major share of the activities in elementary classrooms are in some way related to reading, we found it best for an observer to spend an entire day in one classroom, recording all of the relevant activities on the form. In junior high school, observations are tied to the length of the class period, and the description of a full day of activities requires the observation of different classes.

The observer uses both the blank form and the glossary while making classroom observations. The form is divided into ten columns; each of these columns also occurs in the glossary, which is shown in Figure 2. There are no entries in Columns 1, 9, or 10 in the glossary. We shall discuss these first.

Insert Fig. 2 about here

Column 1 contains the number which designates a specific observation. A teaching sequence or event may be comprised of several numbered observations. Each activity in a sequence that is coded by the observer is given a number. The numbers continue in sequence for the entire observation period. (Observations from a day spent in an elementary classroom will usually cover several pages.)

In Column 9 the observer writes down the length of time the event being observed lasts. Since it is usual for several observations to make up a teaching sequence, the number of minutes written in the duration column should be for the <u>total</u> sequence and not each element of it.

Column 10 is reserved for any comments a teacher wishes to make about what has just occurred, or what he or she plans to do next. (This column was added at the request of a teacher who wanted to explain what she was going to do the next day. We feel that teachers should be able to make comments about what the observer is seeing.)

For each of the remaining columns there is a list of admissible entries. Column 2, titled <u>Actor</u>, is where the observer records who

is being observed. Typically a sequence will start with the teacher. If, for example, a teacher points to a sentence he or she has written on the board and asks the students to read the sentence out loud, the observer will write "T" in the Actor column for Observation Number 1. If the group has seven students in it and they are reading the sentence as a group, the observer will write "7S" in the Actor column for Observation 2. Then if the teacher next asks the students to copy some words from the chalkboard, the observer will write "T & 7S" in the Actor column as Observation Number 3. If the teacher then asks an individual student in the group to close her eyes and spell a word that the teacher presents, and repeats this procedure with several of the students in the group, the observer will write "T" and "7 S's with I.T." (Individual Turns) for Observation Numbers 4 and 5 respectively.

If the observation begins with student activities, the observer writes down the number of students being observed. If the entire class is involved, a "C" is written in the Actor column. If during this sequence individual members of the class are responding to questions from the teacher, "C with I.T." is written in the column. If the teacher and the entire class are doing an activity simultaneously, "T and C" is written in the column.

We cite teacher aides and student teachers as teachers, if we are observing a teacher sequence in which the aide is teaching. The form can also handle situations in which students are working together and peer tutoring. If one student is working with another student, and

the first student is essentially a teacher, we still call each of the members of the pair an S, and indicate the teaching nature of the first student's behavior in the Does column.

Columns 3 and 4, Does and Level of Discourse, are the sections with the most entries, and the columns in which the main content of what is occurring is recorded. In each of these columns we have listed categories and sub-categories. The category heads are intended to help the observer find a sub-category word that will describe the behavior being observed. The observer uses the most precise term possible, and if there is no suitable term written on the form the observer writes in his own. It is also possible that the observer may choose to write in the category term itself as the most accurate description of what is happening. We feel the flexibility of these procedures for making entries in Columns 3 and 4 permit observation codings to remain very close to what is happening in the classroom.

The action word or words that are to be used to describe what is happening are written in Column 3, the Does column. The categories that appear in this column are read, write, listen, talk, locate. Each of these categories contains a list of words that the observer can use to precisely describe the action that is occurring. The blank lines at the end of each category remind the observer that any other suitable entry can be written in. The word other at the end of the column indicates that a new category can be introduced. If, for example, a teacher is correcting the misread words of a child who is

reading out loud, Observation Number 1 would be "reads aloud" in the Does column and Observation Number 2 would be "corrects," and there would be an indication that Observation Number 2 is a part of a sequence, starting with Observation Number 1.

(example)

1	2	3
OBSERVATION NUMBER	ACTOR	DOES
1	1S	reads aloud
2	T	corrects (1)

It is also possible to use more than one word in any one column; if the observer should choose to write "listen" and "correct" in the Does column of the above example that would be acceptable.

The content of what is occurring is recorded in the Level of Discourse column. Deciding what to write in this column probably takes the most knowledge and judgment on the part of the observer. We have deliberately tried to keep the descriptions as simple as possible. We have done this for two reasons: 1) so that relatively unsophisticated observers can use the form, and 2) because our Activity Classification System, which is discussed below, would not be able to reflect finely differentiated reading tasks. (That the descriptions could be more highly detailed is particularly true of activities that involve the teaching of phonics or various kinds of comprehension activities.

The categories that appear in this column are letters and/or sounds, letter and/or sound combinations, words, word combinations, comprehension skills, writing skills, grammar, style, and other. As in the Does column the blank lines at the end of each category remind the observer that any other suitable entry can be written in, and the category other at the end of the column indicates that a new category can be written in. Again, we seek flexibility in order to permit the form to closely reflect what is occurring in the classroom.

The example above, in which a teacher is correcting the mistakes of a child who is reading to him or her, with the Level of Discourse column filled would look like this:

(example)

1	2	3	4
OBSERVATION NUMBER	ACTOR	DOES	LEVEL OF DISCOURSE
1	1S	reads aloud	sentences
2	T	corrects (1)	words

As in the Does column, the observer may use more than one word from the Level of Discourse column. For example, in a teaching sequence in which a teacher is using spelling rules to demonstrate verb tense usage, the observer would write "spelling" which is from the words category and "verb tense" which is from the grammar category.

Columns 5, 6, and 7 are designed to characterize what the teachers and students are looking at, talking about, or listening to. In Column 5 the observer indicates what media is being used in the activity being observed by writing one of the words on the list in the column. We have included picture book, workbook, ditto sheet, word lists, chart, cards, book, audio tape, film strip, film, magazine, newspaper, chalkboard, blank paper, and oral (which is used for activities for which there is no accompanying written or pictorial material). There is also another blank. It is in this column that the observer is to write down the title, publisher, and edition of any published materials that are being used.

If published texts are being used, the observer indicates the type of material in Column 6. The listings include, for example, reader, reading workbook, math book, math workbook, science book, and science workbook.

The entry in Column 7 is related to the type of material being used in Column 6. If, for example, the students are filling in prefixes and suffixes in a reading workbook, Column 6 would have "reading workbook" written in it and Column 7 would have "skill lesson" written in it.

In Column 8, Type of Instruction, the observer indicates by the letters, a through e, the nature of the instructional setting being observed. The listings are: a. direct teacher instruction, b. teacher initiated and monitored activity, c. teacher initiated but not monitored activity, d. student initiated independent activity, and e,

homework assignment. We feel those phrases sufficiently discriminate five classes of student-teacher-and-work interactions; however, we would agree that entries could be designed to give much finer indications of the type of interactions taking place.

Appendices C and D show sample observation sheets from the 1st and 6th grades which were taken from our most recent round of observations.

Classification of Activities and Materials

One of the objectives in the development of the observation form was to obtain a rich description of classroom activities while at the same time placing minimal demands on the observer. For this reason, classification and inference were, as far as possible, minimized during the observation phase. Further, maximum flexibility was sought, in order to cope with the diversity of activities which might be encountered. While the current list of admissible entries is not exhaustive, it permits approximately 10^8 unique activity descriptions. This number reflects all combinations of the possible entries in each column, except the Activity Number, Duration, and Comments columns. It is unlikely that all these combinations would ever be observed (some are nonsensical); however, a large corpus presents problems of scale. To date, we have logged approximately 100 hours of observations. These 100 hours have translated to roughly 1,000 observations coded on approximately 200 observation sheets. In a serious, representative sample of, perhaps, 700-800 observation hours,

the mountains of paper would make inspection of the corpus laborious, and the number of observations would make unguided searches through the corpus impractical, no matter how they might be reduced through computer coding or micro-filing. A classification system to permit easy indexing of and access to the corpus is clearly required.

We have developed two classification systems, one for activities and the other for reading material. Ease of classification and access seem best served by a common sense, pretheoretical classification system, while summarization and description would be facilitated by a well worked out, theoretically-motivated scheme. The classification systems we have developed lean toward ease of classification and access, although we hope they may be of some use for summarization and analysis. We have applied these classification systems to the final 50 hours of observation (at least five hours in each grade from K-8) which were recorded using the current observation form. Classification of the coded observations posed no serious difficulties, and we are confident that raters could be trained to classify such observation with high reliability.

The activity classification system shown in Table 1 reflects the fact that we have been concerned exclusively with observing reading in the schools. It was deemed important to distinguish between reading instruction per se (RI) and instruction through reading (RII). Reading for a specific, immediate purpose (RIII) and recreational reading (RIV) are classifications which probably account for the bulk of reading activities outside the classroom, but their relative importance in

school remains to be determined. The classification system is fleshed out by the subclasses and descriptors outlined in Table 1. Classes V to VII are applied to nonreading activities. Discussion activities (V) and film strips/movies (VI) are both subclassified according to the content area involved, and a descriptor designates whether the activity was related to a previous or future reading activity.

Insert Table 1 about here

The rule for classifying a reading activity is as follows: the judge seeks first to see if the activity was intended to teach reading; if not, the judge attempts to classify the activity as reading in a content area; if that fails, the judge looks for a specific, immediate purpose for the reading. If none is found, then the reading is classified as recreational. In making these classifications, the rater uses all the information coded on the observation form.

The materials classification system (Table 2) also fills the need for classification-access, as well as descriptive-analytic needs. Reading materials are identified by title whenever possible (typically for all reading materials in classes I to VII). The classification system, however, is intended to be applicable to all reading material encountered in grades K-8, whether a title is available or not (Class VIII). Thus, a very broad definition of text or reading material has been employed. An index of all the reading materials, with titles where possible, as well as observation and page numbers referencing

the activity in which the material was used, was tabulated.

Insert Table 2 about here

These classification systems could provide easy access to a corpus of observations. For example, a user could specify a reading activity category like RII,C, Reading to Learn and Remember Social Studies, and obtain a list of all the observations which had been given that classification without having to specify in advance the coding which such activities would have in the various columns of the observation form. The size of the list could be constrained by specifying descriptor values.

The classification system could also be used to summarize the data. The number of student-minutes for each activity could be computed by multiplying the number of students involved by the duration in minutes of the activity. The proportion of student-minutes spent in each activity category could be computed and compared across grade levels. The use of such data to detect changes in the reading activities and materials employed in school between grades K-3 and 4-8 will be discussed below.

Future Development of the Observational System

The observational system described in the preceding sections is the result of our work to date. It is not, however, a polished, final product. Several modifications or additions might improve its utility or extend its power. Below is a partial list of the refinements, modifications, and additions, which might be undertaken.

1. A teacher interview form, which would be used to interview the teacher after a period of classroom observation has taken place, could be developed. We have begun this task, and include the most recent revision of the form in Appendix E. We have tested the form sufficiently to become convinced of its utility and usability, and to permit several rounds of revision.

The teacher interview form would be directly tied to the classroom observation; the observer would use a coded observation to identify an activity to the teacher, and then discuss with the teacher all of the items on the teacher interview form for that activity. Teacher interviews could provide a valuable source of data, and, in our opinion, any major project should include some form of interview. The comparison of an analysis of the skills or information taught by an activity as compared to its stated purpose would be interesting and important. Teacher opinions of the difficulty, interest, and appropriateness of reading materials for various students would also be of value.

2. The entries in the present Type of Material column should be moved to the Location or Source of Discourse column and a Title, Edition, and Publisher column added (see Appendix F), This information is so important that a separate column should be provided to ensure that the titles, levels, edition, and publisher of those materials in the observed activities are recorded.

3. Further refinements and extensions might be needed in the entry lists for several columns of the observation form. The changes

In the Does column should reflect any definitions or additions that additional classroom observing dictates. Changes in the Level of Discourse column would be determined by the level of detail the users of the observations require. It would be possible, if researchers need more precise descriptions of the nature of the type of instruction taking place, to revise the entries to Column 8, the Type of Instruction column, so that they describe in finer detail the type of instructional interactions taking place.

4. The decision to collect a large number of class observations would require the development of systematic training procedures for observers. It is anticipated that the training would include an explanation of the purpose and use of the form, and practice sessions in which the observer would watch instructional sequences on video tape, record these on a form, and then get feedback on the form he or she has filled out. Initial training sessions would be followed by a period of observations during which an experienced observer is also in the classroom. The success of this training procedure could be easily evaluated by matching the neophyte observer's classroom observation forms with those of the experienced observer.

A Possible Corpus

In the preceding sections we described the development and use of the observational system to date, and procedures for coding and classifying observations. In the sections below, we will outline the

selection, collection, computer indexing and retrieval, and use of a possible sample of observations. Although we have indicated above that we feel that further development of the observational system is required before a large sample is collected, we have cast our discussion of a possible sample in the mold of the current system, for the sake of clarity and simplicity.

Sampling Procedures to Select Classrooms for Observation

We begin with the specification of a population: classrooms in grades K-8 in the public schools in the State of Illinois (assuming for the moment that the project would be undertaken by this Center). Note first that our goal is to sample classrooms, not pupils. Next since approximately 90% of all pupils in grades K-8 in Illinois (and a similar percentage nationally are enrolled in public schools, we choose, for reasons of expediency, to limit the sampling to this group, recognizing that this limits the range of generalization of the findings. Our judgment is that the loss of representativeness would be more than compensated for by a savings in time and resources.

Finally, we have chosen to restrict this survey to Illinois, recognizing that materials used in public elementary schools vary across geographic regions of the United States, and that it would be inappropriate to presume to generalize from findings in Illinois to every geographic area. The decision to restrict the sample to Illinois was made for two reasons: the physical proximity of observation sites to

the Center simplifies the logistics of the study and reduces costs for both travel and communication; and the availability of a re-analysis of 1970 census data by school district within Illinois simplifies that part of the sampling task that involves stratification on the basis of such demographic variables as socioeconomic status and population density. Similar sampling procedures could be employed to select a national sample, or a sample from another state.

Given this specification of the target population, what follows is our current thinking about how the sampling might be accomplished. Essentially, what we are proposing is to choose a stratified random sample with probability proportional to size (enrollment) of the school districts. A multi-stage (sequential) plan, with school district as the primary sampling unit would be employed.

Beginning with the most recent edition of the Directory of Illinois Schools, published annually by the Illinois Office of Education and the census data, all school districts would be stratified on the basis of geographic region within the state, socio-economic status (SES; High vs. Low) of the district, and population density (Rural vs. Urban). Then a list of all public school districts in the state, grouped by category on the basis of these stratification variables would be compiled. Since the Directory also provides enrollment information for each district, cumulative enrollments would be listed alongside the district names. Using a random number to determine a starting point, and a fixed interval size to determine

the "sampling increment," we would identify school districts to be asked to cooperate in the study. (Procedures for replacing districts that refuse to participate will also be specified.) This scheme would lead to a sample in which every pupil in the population has an equal probability of being included in the study, regardless of the size of the school district in which he or she were enrolled.

Once cooperating school districts had been identified (districts could appear more than once in the sample), as many schools within the district as the number of occurrences of the district in the sample would be chosen by selecting the school whose name follows alphabetically the surname of the district superintendent, then succeeding schools until a sufficient number of schools had been identified. One classroom at each grade level (K-8) would be observed from each school included in the sample. (Appropriate adjustments would be made to take into account the differential organizational patterns of school districts; e.g., K-6 and 7-12, K-5 and 6-8, K-8 and 9-12.) The final sample might consist of four classrooms at each grade level for each SES x population density x cell, or 144 (4 x 9 x 2 x 2) classrooms. The sampling procedure might be modified to include stratification by geographic region, to assure the geographic representativeness of the sample.

Since instruction within a classroom clearly depends in part on the average achievement level of pupils within that classroom, it

would be desirable to collect comparable data from all classrooms in the sample regarding average reading level. Since different districts use different standardized tests, direct comparisons are impossible. (We have tentatively rejected the idea of administering tests ourselves.) It might be possible to use the results from the USOE-ETS Anchor Test Study to transform scores from different tests to a common scale.

A Computerized Cross-Indexing Retrieval System

In order for the corpus of observations to be maximally useful to researchers with different purposes, a three-level coding system has been devised. Every observation would be coded into one eighteen-variable list which will uniquely identify that observation. The eighteen-variable string will code information derived from three sources: 1) the observation sheet, 2) the activity classification (Table 1), and 3) the text classification (Table 2).

The observation sheet will be coded into the first thirteen variables of the string. These thirteen variables will code the first nine columns on the observation form (i.e. all columns except comments) plus the observation page number and codes for the grade, SES, and rural-urban distinction. Each possible entry in an observation column would be numbered. For example, an observation which included [Actor = class, etc.; Does = copy, etc.; Level of Discourse = paragraph, etc.; Location = chalkboard, etc.] might be coded

as (4, 5, 24, 5, ...). The 4 corresponds to the fourth possibility in the ACTOR column. The 5 to the fifth possibility in the DOES column, and so forth. Whenever a column is inappropriate, a special symbol will be used as a blank code (probably the number 0). In this way each observation can be coded by using an observation form coding key.

The second component of the variable list is a three variable code corresponding to the activity classification. For example, the code (R, II, B) would designate a reading activity in the content areas, specifically in science. The code (I, V, C) would indicate that, as an introduction to a reading activity, a lecture-discussion of social studies occurred. The final component of the string is the text code. This is a 2 variable list: the title of the reading material and the classification. For example, (Worldbook, VA) means that the text used was the Worldbook Encyclopedia. The eighteen-variable description list will then be stored in chronological order with all other description lists on a disk. We have designed a system such that an input of specified values for any subset of the complete string will be able to retrieve all instances of observations coded according to the designated values of the variables. This method enables a researcher to specify a particular type of observation and retrieve all instances of them; to specify a text and find all uses of it; to specify a grade and a certain activity classification; etc. for any combination of variables.

To accomplish this, a complete cross-indexing scheme is used. To conserve computer disk space, each observation is stored only once and the entire list of observations is searched each time the system is used (rather than indexing on specific variables). Our cost estimate for 10,000 observations, and a search input of 1 to 19 variables is about $1.00 per search.

Uses of the Corpus

The project described in the preceding sections would develop a corpus of observations which could be of considerable value to reading research. One possible benefit would be the documentation of changes in the texts and tasks which students encounter between the lower and middle grades.

It is reasonable to suppose that analysis of the corpus would reveal the following four kinds of changes in the texts to which children are exposed as they move from kindergarten to the eighth grade.

1. It is plausible to expect an increase in the number of types of written material as grade level increases, as novels, biographies, and specific science texts, such as chemistry texts, are added. This would show up in the number of types of text required to classify texts observed in the different grades. It will probably be useful to distinguish between texts used as free reading material, and texts used as assigned readings, and to analyze these classes separately.

2. Shifts in the proportion of use of different types of written material might be documented. As grade level increases, we may expect to find:

a. a decrease in the use of basal readers.

b. a decrease in the use of the chalkboard, flashcards, and other similar instructional text-sources.

c. a decrease in the use of workbooks.

d. an increase in the use of literature written for the general public rather than for grammar-school audiences.

e. an increase in the use of content-area textbooks.

f. a shift in textbooks from passages that are primarily narrative to those that are primarily expository.

These shifts may show up either as a shift in the proportion of texts observed which are of a certain type, or as a shift in the proportion of time spent on activities employing a certain type of text.

3. A shift may also be anticipated in the proportion of use of Types of Selections (as coded on the observation form) in readers and reading workbooks. As grade level increases, a shift from decoding to comprehension selections may be expected.

4. Perhaps most important shifts occur in within-text characteristics. As grade level increases, a few of the many such shifts which may occur are:

a. an increase in difficulty at the word level (as measured by word length, word frequency, etc.)

b. an increase in difficulty or complexity at the sentence level (as measured by sentence length, Yngve depth (Yngve, 1960),

verbs per sentence, or abstract nouns per sentence), use of figurative language (including idioms, metaphors, hyperbole, etc.) use of implicature (including rhetorical questions, etc.).

c. an increase in difficulty or complexity at the level of discourse structure (as evaluated by such methods as those of Meyer, 1975, 1976; Meyer and McConkie, 1973; Kintsch, 1972, 1974; Frederiksen, 1972, 1975; and Rumelhart, 1975). Increase in discourse complexity may also show up as a decrease in repetition, both exact and paraphrastic.

d. an increase in the inclusion of instructions for lessons in the text (workbook, etc.) itself.

e. a decrease in the use of pictures (as measured by the number of illustrations per page or the proportion of page space occupied by illustrations), and an increase in the informativeness of the illustrations and their dependence upon accompanying text for comprehensibility.

f. changes in typography (e.g. smaller type, smaller margins, more lines per page, more characters per line).

g. a decrease in stories and in direct quotations, and a concomitant increase in descriptive and expository text.

Detection of such shifts requires a more fine-grained analysis of texts than is possible from observational data alone. Copies of texts will need to be obtained for these analyses. The texts to be analyzed may be those identified by titles in a corpus of observations; some data about their actual use would then be available. Alternatively, they could be selected from a "best sellers" list compiled independently of our sample to identify texts known to be widely used. This possibility will be discussed in a subsequent section.

Several of the shifts in observed classroom activities which might be revealed by analysis of the proposed corpus are outlined below.

1. As grade level increases, changes might be expected in the relative occurrence, in terms of the proportion of observed activities or proportion of time (in student-minutes, see Appendix E) of different types of activities, as coded by the activity classification system shown in Table 1. Some of the changes which might be found are:

   a. a decrease in the occurrence of activities designed to teach reading skills (RI) accompanied by an increase in the use of activities which employ reading to teach subject matter (RII).

   b. a shift within activities intended to teach reading from activities which focus on decoding skills (RIA) to activities which are designed to improve comprehension (RIB).

   c. an increase in the incidence of reading for a specific, immediate purpose (RIII) and recreational reading (RIV).

2. As grade level increases and children become (or are supposed to become) more facile with written language, shifts (in terms of the proportion of activities or proportion of time) which might be anticipated would include:

   a. an increase in the reliance on reading for the acquisition of information. This would show up as an increase in the occurrence of reading in the content area (RII).

   b. a shift from oral to written task directions. This would show up as a decrease in the proportion of time for observations coded as "teacher gives instructions" or "teacher explains instructions," etc.

   c. a switch from oral reading, coded as "students read aloud," to silent reading, coded as "students read (silently)."

   d. a shift from oral response production, that is observations coded as some form of "student(s) say," to written response production, coded as "student(s) write."

e. a decrease in the teacher's reliance on aids (such as concrete objects, actual examples, pictures, etc.) as an accompaniment to oral instruction. This might show up as a decrease in the number of "teacher says" activities that include conceptual aids, or as a decrease in concreteness of such aids; e.g., from concrete objects and pictures to charts and graphs.

3. There may be a shift in the level of discourse, which would be revealed as a change in the relative use (proportion of time or activities) of activities which involve the different Levels of Discourse, as coded on the observation sheet. For example, one might expect a swing from letter and word level activities to sentence and higher level activities.

4. As grade level increases, activities might shift along some general instructional dimensions, such as:

a. an increase in Activity Duration (as coded on the observation form). A trend toward fewer, longer lasting activities would be expected to emerge.

b. a shift in Type of Instruction. If the relative use of different types of instruction changes with grade level, the corpus should reflect the change.

c. a shift in the number of students involved in activities.

It is possible that the observations might be at too coarse a level to capture all of the shifts suggested above, even if they do in fact occur. For example, observation of college classes would certainly lead to a lower instance of "students read" activities than would observation of grade school classes. The reason, however, is not that there is less reliance in college on reading for the acquisition of knowledge, but that professors expect (often mistakenly) that the reading will be done outside of class. It is also certain that many shifts could not be detected by an

observational system such as ours. It seems likely, however, that a large number of changes of a gross nature could be documented, and that their detection and analysis would be an important component of the development of understanding of reading activities in our school.

Alternatives to the Proposed Procedure

While we will not attempt to exhaustively outline other possibilities for sampling texts and tasks, we will examine a few methods of gaining information about reading activities and materials which might be considered as alternatives or adjuncts to the observational system we have developed.

Questionnaire Survey of Teachers

A mail survey at first glance offers attractive advantages; surveys can provide the low cost, relatively rapid collection of massive amounts of data. A truly representative national sample is feasible given the economics of the survey. The Carroll et al. (1971) sample of third to ninth grade reading materials and the Rubin et al. (1973) evaluation of compensatory reading programs were both based on responses to questionnaires mailed to representative national samples. The EPIE project has also been largely based on questionnaires. As noted above, we began with the intention of developing both observational and survey methods for sampling activities and materials, but have since abandoned the development of a survey sample. Questionnaires are designed to obtain answers to a small set of well defined questions. The set of questions which could be

addressed by the sample is as yet ill-defined, but it could be a very large set. It would be impossible to obtain by questionnaire the level of detail which we have sought to maintain in our observations given any reasonable limits on teacher time, patience, and memory. The construction of a questionnaire constrains the sort of information which may be gathered, in a fashion which is many orders of magnitude more restrictive than possible codings on the current observation form.

Finally, a questionnaire is subject to the possibility of distortion by the respondent, who may bias responses toward what s/he wishes were true or thinks the investigator will approve. While observations are certainly not immune to the possibility of bias, they would seem to be less suspect on these counts, providing that the observer remains more detatched and objective than is likely for the teacher.

Reading and Mathematics Observation System

The RAMOS system developed by Calfee and Hoover (1974) represents the product of more than five years of development. The modification of RAMOS is an alternative to the further development of the system presented here which should be weighed. RAMOS is a descendant of the Reading Diary Study system implemented in 1972, and of earlier field instrument and observational systems developed by Calfee (Calfee, Evan & Venezky, 1971; Calfee, 1972) and Hoover. RAMOS has been used in the California Beginning Teacher Evaluation Study (Calfee & Calfee, 1975) and in the on-going Trenton Project, an evaluation of teacher in-service training being

conducted by McDonald at ETS. It is a complex, elaborate, and well worked out system. The manual for coding observations (Calfee & Hoover, 1974) runs to fifty pages.

The basis of RAMOS is that the observer codes a complete description of the setting and activity of groups of students in a classroom at the start of an observation period of 30-60 minutes, and then records any change in the state of a group by entering only a group code, the time at which the change occurred, and whatever codes are necessary to specify the change. In this manner, it is contended that an observer can code in real time under normal classroom conditions all observable changes of 30 seconds or more duration for two or three groups of students simultaneously. The coding of the state of the groups at the beginning of the observation period is divided between a coding on the Start Form of classroom characteristics which are likely to remain stable throughout the period (e.g., the number, size, and location of student groups and the number and nature of instructions) and a separate full coding of each group on the Event Form of those dimensions which are more likely to change. The array of dimensions upon which changes can be coded includes the seating arrangement and disperson of group members in the classroom; the availability, mobility, and role of the instructor; the pattern and type of feedback; the social interactions and focus of attention of the students, etc.

RAMOS aims at a broader description than the system we have been developing. While we seek a fairly general description of what occurs in classrooms, our system focuses on reading activities and materials,

and no attempt is made, for instance, to code the spatial location or noise level of student groups. Calfee and Hoover suggest that investigators with a specific interest can concentrate on the categories that correspond to that interest. The all encompassing nature of the observational form, however, seems to have dictated a coding method quite different from our own. Because we use a 10 column form to code a single activity-material pair, we were able to design considerable flexibility into the observational form. RAMOS, on the other hand, aims at a total description of the classroom mileau, but accomplishes this at the expense of a relatively limited description of activities. Further, RAMOS requires far more inference by the observer. For example, in order to code Reading Skills, the observer is asked to make the following distinctions:

> DECODING, SIMPLE. Letter-sound correspondence rules involving regular consonants, consonant clusters, consonant blends, and single vowels, whether long or short. Instruction may be based on phonics principles, blending, analysis of word sounds, rhymes, or word patterns.
>
> DECODING, ADVANCED. Letter-sound correspondence rules of a more complicated nature including vowel diagraphs, "r", "l", and "w", effects on vowels, "silent" consonants, and correspondences that are related to syllabification. (from Calfee & Hoover, 1974, p. 75)

An observer using RAMOS is also expected to discriminate comprehension-facts, literal; comprehension, relations; comprehension, main idea; comprehension, sequence; comprehension, external reference; comprehension, appreciation; and comprehension, conditions. In order to code Aim, the

observer must determine whether the activity is something New, or is Practice, Reviews, or Application of a Concept, Skill, or Fact.

While RAMOS has been developed for evaluation purposes and is therefore not optimally suited to provide a detailed description of reading activities and materials, there are several aspects of the system which might profitably be adopted; for example, the separation of Start and Event forms, and also, the stripped down coding of changes in a groups' activity which permits greater systematization of the simultaneous recording of several groups.

The California Beginning Teacher Evaluation Study data was examined to test for changes between second grade and fifth grade in the proportion of time spent by teachers in different instructional modes and the proportion of time spent using different types of materials. While changes were found, the validity of the data is perhaps questionable, due to the manner in which observation periods were selected: observers were enjoined to observe a classroom "for a period during the day when reading or language arts were being taught, a period when mathematics was being taught, and one or two additional periods when neither of the above was being taught" (Calfee & Calfee, 1975, p. 13), but were otherwise free to choose which periods to observe. Nevertheless, further examination of the procedures and results of this study and of the Trenton Project, particularly the current work which is focusing on reading comprehension, seems essential.

Identification of Widely Used Reading Materials

The detailed analysis of reading materials requires more extensive examination and dissection of the text than is possible during observation in which activities are being coded. It can only be accomplished by detailed examination of a physical copy of the text. The identification of texts by title, author, publisher, editor, etc. enables the researchers to obtain texts specified by some sampling procedure. There is a need to identify those texts in current wide-spread use in grades K-8 so that such analysis will have ecological validity. This need could be filled by an observational system such as the one reported here. Observations, however, offer a relatively expensive, time consuming, and inefficient method of identifying widely-used texts. Surveys directed at book users or sellers which aim specifically at the identification of widely used texts would offer greater efficiency.

As discussed above, Carroll et al. (1971) have already conducted such a survey of schools and identified the most widely used books in a number of topic areas for grades 3 to 9. However, this sample is by now somewhat dated, and might need to be supplemented to include new and revised titles. The reports from EPIE might well serve this function.

While the Carroll et al. (1971) sample was confined to schools, a survey published by Kujoth (1973) was not so limited. Kujoth surveyed sixty-eight publishers from Harper & Row and Houghton-Mifflin to Dell Publishing Company and Boy Scouts of America. Publishers were asked to identify all the in-print juvenile trade books (books which are not textbooks) which they published which had sold 100,000 or more copies. The

survey yielded 928 titles which are separately indexed by author, by title, by illustrator, by year of original publication, and by the number of copies sold. There is also an index in which books are listed by age level (preschool to grade 3, grades 4-7, and grades 8-12), type (fiction or nonfiction), and subject category (e.g., animal stories, acts, biographies, mysteries). Again, the sample is somewhat dated, as it includes only texts published before 1972. This defect, however, could be easily overcome by supplementing the sample with the annual national survey of bookstores published each February by Publishers Weekly which identifies current best-selling children's trade books. A sample drawn from a pooling of Kujoth's survey with the Publishers Weekly surveys compiled from 1970 to the present would represent an economical and fairly valid sample of such books. A similar survey of publishers could be undertaken to identify current best-selling textbooks.

Classroom Videotapes

The sampling method which seemingly offers the richest description of reading activities is the collection of a set of videotapes from a sample of classrooms in the prescribed grades. Several serious disadvantages of videotape, however, indicate that this method is not feasible as a source of a representative sample of reading activities and materials.

First of all, the obtrusive and disruptive nature of a camera, vis-a-vis an observer, introduces special problems. Permission to videotape a classroom might be more difficult to obtain than permission to observe;

therefore, the sample of classrooms which could be videotaped could be more subject to selection bias than a sample of classrooms for observation. Further, children tend to exhibit camera-directed behavior (e.g., waving and making faces at the camera) which are less frequent or totally absent for the lone observer. The level of awareness and possible modification or distortion of behavior by both teachers and students could also be higher for videotape.

Another disadvantage of videotape is that focal length of the camera lense and distance from subject which permits a detailed visual record of a specific activity would, of necessity, exclude from the field of view most of the classroom . The selection of a focus for the camera would be crucial.

Finally, and most important, videotape is ill-suited to constructing a representative general description of reading activities because of the time and expense involved. Camera crews and equipment, by themselves a considerable expense, would need to be supplemented at the time of taping by an observer who would record the context of a scene and the title of the material being used. The files of videotapes would themselves require extensive observation before any information could be extracted.

In summary, the cost of obtaining, storing, indexing, and observing a videotaped sample renders the method impraticable. However, videotaping might be useful in the special purpose observational studies to be considered next.

Special Purpose Studies

An alternative to a general descriptive sample of reading activities and materials, which aims at being of interest and value to reading researchers with a wide range of concerns, is to conduct narrow, intensive studies of specific issues. While such studies might, in sum, be more expensive than a single omnibus investigation, their increased utility may more than compensate for the added expense. A general sample may be of interest to more people, but this generality is purchased at the expense of the level of detail which is possible. Thus, in attempting to develop an observational system able to code a wide variety of activities in a broad range of classroom instructional contexts, the ability to record the infrastructure of a particular instance of a reading activity must be sacrificed. For example, our observational system offers no way of coding the exact wording used by a teacher in assigning or teaching a lesson or the study skills employed and problems encountered by a student during a reading activity. Although we feel that the system outlined here could, if developed further, yield a more detailed description of reading activities and materials than is possible using RAMOS or other currently available instruments, it may still fail to supply the information required for meaningful analysis. Further, it is impossible to anticipate the questions which reading researchers will be addressing in future years. The varied, exacting, unanticipated needs of reading research may best be served by smaller, more focused observational studies.

Summary and Conclusions

In this report, we have outlined progress to date in the development of procedures for sampling the written discourse that children experience during grades K-8, together with the task conditions under which discourse is encountered. The bulk of our effort has gone into the development of a classroom observation system that features concurrent recording of reading activities and reading materials. The system has gone through several cycles of tryout and revision. While further refinement would be required before it would be sensible to undertake a substantial investigation, we have enough experience to predict that the system could in fact be implemented, that observer reliability would be no problem, and that it would yield some useful information. If a large corpus of observations were collected using the system, summaries could be obtained of the reading activities that actually occur in schools, the reading materials actually employed, and the time devoted to each activity and type of material.

Classroom observation has both advantages and disadvantages when compared to other techniques. If one is concerned only with text sampling, a much larger, probably more comprehensive corpus could be obtained at a lower cost from a questionnaire. Most previous samples have entailed a questionnaire. There are probably some biases in this method, however.

Survey methods seem quite inadequate for task sampling. On a questionnaire teachers may emphasize that which they think they should be doing rather than that which they are doing. There is no adequate commonly agreed

upon vocabulary for discussing reading tasks, as has become painfully clear to us, therefore, phrasing unambiguous questions for teachers would be difficult. Perhaps most important, survey techniques could not yield an adequately detailed description of reading tasks. Classroom observation makes considerable sense for sampling reading activities.

The classroom observation scheme described in this report was developed without the benefit of a well-formed theoretical framework. Nor was there available a list of practical questions which the scheme could be designed to answer. A corpus compiled using our system could be analyzed to give some general information about a great many issues in reading. This information undoubtedly would be more accurate and detailed than could be obtained with survey methods. Nevertheless, in practice, the information still might not be sufficiently rich to be of substantial help in resolving issues in reading research or reading education. After the corpus had been collected, anyone who then formulated a precise question might be disappointed in the quality of the answer that could be gleaned from the corpus. It seems axiomatic that a study designed to answer a certain specific question will produce a more penetrating answer than a system constructed to answer a great many questions in general but no one question in particular.

In conclusion, considering the substantial investment of resources that would be necessary, we have reservations about the wisdom of proceeding

with a project that can produce only general descriptions of reading materials and reading activities. Special purpose studies should be seriously considered, instead.

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Table 1

An Activity Classification System

RI Reading to learn reading skills

RIA. Decoding activities
RIB. Comprehension activities

RII. Reading to learn and remember information in the content areas

RIIA. Math
RIIB. Science
RIIC. Social Studies
RIID. English or Language Studies
RIIE. Applied (Home Economics, Shop)
RIIF. Esoteric (Art, Music, Gym)

RIII. Reading for a specific, immediate purpose

RIIIA. Reading to locate specific information
RIIIB. Reading to select something
RIIIC. Reading as a part of the process of making something
RIIID. Reading as a part of the process of getting somewhere

RIV. Reading for pleasure

RIVA. Non-fiction
RIVB. Fiction

Descriptors for RI to RIV

Type of text involved, 0. No text immediately present, 1. Chalkboard, flashcards, charts, diagrams, etc., 2. Tests, 3. Workbooks, 4. Readers, 5. Content texts, 6. Other books, 7. Activity sheets.

Title of text when possible.

Type of instruction, 1. Direct teacher instruction, 2. Teacher initiated and monitored activity, 3. Teacher initiated (but not monitored) activity, 4. Student initiated independent work, 5. Homework assignments.

Number of students

Duration

Instruction, Information, Response: Each classified as either oral (1), written (2), or doesn't apply (0).

Table 1 (continued)

V. Lecture-discussion activities

VA. Math
VB. Science
VC. Social Studies
VD. English/Language Studies
VE. Applied
VF. Esoteric
VG. Reading: Decoding Skills
VH. Reading: Comprehension Skills
VI. Other

Each lecture-discussion activity can further be classified as:

1. Introduction, preparation for reading
2. Review, discussion of something previously read
3. No clear relation to reading activities

VI. Filmstrips, movies, tapes, etc., with no reading

Filmstrips, etc. are classified the same as Lecture-discussion activities (A-1 and 1-3)

VII. Other non-reading activities

Table 2

A Classification System for Materials

I. Textbooks

(Any book which is regularly used for assignments in reading or the content areas will be considered a textbooks.)

A. Reading
B. English/Language

1. Spelling
2. Grammar
3. Writing, penmanship
4. Writing, composition
5. Literature appreciation
6. mixed

C. Social Studies

1. History
2. Geography
3. Government/civics

D. Science
E. Mathematics

1. Arithmetic
2. Algebra
3. Geometry

F. Applied

1. Home economics
2. Shop
3. Health/family life

G. Esoteric

1. Art
2. Music
3. Gym
4. Drama

Table 2 (continued)

II. Workbooks and Drill Kits

A. Reading
B. English/language
C. Social Studies
D. Science
E. Mathematics
F. Applied
G. Esoteric

III. Nonfiction Books

(III and IV include any hard- or soft-bound book which is not a workbook or reference book, nor used as a textbook.)

A. Reading
B. English language
C. Social Studies
D. Science
E. Mathematics
F. Applied
G. Esoteric
H. Biography
I. Travel
J. Sports
K. Arts/crafts
L. Performing arts
M. Cooking/food
N. Religious/inspirational

IV. Fiction Books

A. Novels
B. Stories--single
C. Short stories--collections
D. Science fiction
E. Mystery

V. Reference Materials

A. Encyclopedia
B. Dictionary
C. Phone book
D. Catalogue
E. Other (thesaurus, almanac, etc.)

Table 2 (continued)

VI. Periodicals (and Comic Books)

- A. Magazines
- B. Newspapers
- C. Newsletters
- D. Comic books

VII. Pamphlets

- A. Product advertising/promotion
- B. Consumer information
- C. Organization information/promotion
- D. Religious/inspirational
- E. Tourist information/promotion
- F. Medical/health/family
- G. Safety
- H. Occupational/career

VIII. Other

- A. Letters/memos
- B. Student papers
- C. Bulletin boards
- D. Chalkboards
- E. Assembly instruction
- F. Product labels
- G. Road maps
- H. Charts/diagrams
- I. Musical scores and songs
- J. Movies/slides/filmstrips with test
- K. Tests

APPENDIX A

OBSERVATION LOG: TEACHER ACTIVITY ANALYSIS

Observer Surber School XXX

Date 10-21-76 Grade 3rd/

Activity Number	Time	Student/Teacher Activity	Material	#
1	12:30	David Kau/Read book-study questions, ditto	Air Pudding & Wind Sauce	
		sheets w/fill in questions - "list" etc.	Economy Co.	
2	12:35	Aide group/T question "what is action word"	Vocabulary Development	
		kid reads story & writes response for sentence	Macmillan, Level 2	
		in story	Spectrum of Skills	
3	12:36	T w/low S/S reads aloud-T corrects decoding,	Finding Out (workbook)	
		has S circle & write in activities, S traces	Macmillan	
		large block letters, etc.		
	12:40	basal reader - kid reads - T corrects	Things You See	
	12:45	back to workbook - "circle the pictures of		
		things that begin with -------"		
4	1:05	T assigns story & ditto sheet - fill in quests.	Mustard Seed	
		like fact things / T prompts & responds	Magic	
		verbal & written	Economy Co.	

APPENDIX B

A transcription of a classroom observation

OBS. NO.	INITIATOR	ACTIVITY OF INITIATOR	LEVEL OF TEXT	LOCATION (source) OF TEXT	RESPONDERS	ACTIVITY OF RESPONDERS	LEVEL OF TEXT	LOCATION (source) OF TEXT	DURATION
1	T	asks			2s	describes phonetic rules for k-i,e c-a,o,u	letters		
2	T	asks			21.T.	read out loud	list of words	book	
3	T	asks			2s	read out loud	poem	book	
4	T	look at			21.T.	look at & isolate	pictures, sounds vs. words	book	
5	T	explains asks & writes			2s	sound out & read	word segments, word	chalk-board	repeated for 5-6 words

APPENDIX C

A transcription of a classroom observation

Teacher XXX Grade Level 1 Class size 22 School XXX Date 12-9 Observer LS

OBSERVATION NO.	ACTOR	DOES	LEVEL OF DISCOURSE	LOCATION OR SOURCE OF DISCOURSE	TYPE OF MATERIAL	TYPE OF SELECTION	TYPE OF INSTRUCTION	DURATION	COMMENTS
1	20's	read silently	instructions and story	programmed reading book McGraw-Hill	Reader	skill lessons	B	20 min.	
	"	writes (1)	letters/words	"	"	"	"	"	
	"	circles (1	answer	"	"	"	"	"	
	"	check for correctness	(1) answer	"	"	"	"	"	
2	1's	read	word	card		pronunciation	d	5 min.	
	"	listens (2)	"	tape recorder	tape	"	"	"	
3	1's	read silently	story	story student has previously written			"	15 min.	
	"	copies writes (3)	"	"			"	"	
4	3's/IT	says	sentence				B	10 min.	
	T	writes (4)	"	paper (book)			B	"	
5	2's	read silently	stories	Nino's Bad Habits SRA 1973 Edition	reader	narrative	D	5-7 min.	
6	1's	"	"	A Surprise for Mother SRA 1973	"	story	"	"	
7	1's	reads silently	story		skill lessons		"	7 min.	
	"	listens (7	"	tape	narrative	story	"	"	
8	1's	reads silently	numbers	connect-the-numbers puzzle	math w.b.?		B	4 min.	
	"	draws (8)	lines between #'s	"	"	"	"	"	
9	T	instructs						3 min.	
	1's	reads out loud (9)	story	Programmed Reading Book 3 McGraw-Hill	reader	comp.	B	"	

APPENDIX D

A transcription of a classroom observation

Teacher XXX Grade Level 6 Class Size 24 School XXX Date 12-8 Observer LS

OBSERVATION NO.	ACTOR	DOES	LEVEL OF DISCOURSE	LOCATION OR SOURCE OF DISCOURSE	TYPE OF MATERIAL	TYPE OF SELECTION	TYPE OF INSTRUCTION	DURATION	COMMENTS
1	T	discusses/explains	fractions	Review for math test →→→→→→→→		informational	a	35 min.	
	class	listens	"	" " "	" "	"	"	"	
2	T	hands out	math problems	math test (ditto) →→→→→→→→→→→→		test	"	"	
3	class	reads silently	instructions/problems	"	"	"	"	"	
4	class	write	numbers	blank paper	work for math problem		b	"	
	"	" (4)	" (answers)	math test →→→→→→→→→→→→

APPENDIX E

Teacher Questionnaire

Activity Number_____ Teacher's Name_____

Date_____

Please answer all questions about the specific activity identified.

1. The primary purpose for this activity was to

   a. teach reading skills.
   b. teach literary appreciation (poems, short stories, novels).
   c. teach writing skills (spelling, punctuation, capitalization, report writing, etc.).
   d. teach content (e.g., math, social sciences, science).
   e. communicate the instructions or procedure for a related activity.
   f. recreational reading.
   g. other (specify).

2. If the purpose of this activity was to teach reading skills (3a above), which types of skills was it primarily intended to strengthen?

   a. Readiness skills (L, R, alphabet letters, directions, same, different, etc.).
   b. Decoding skills.
   c. Comprehension skills.

3. If the purpose of the activity was to teach reading skills, literary appreciation, writing skills, or content (3a, b, c, d, above) will the students be tested:

   a. Immediately, as I monitored the activity while it occurred.
   b. By oral questions in class.
   c. By a written test.
   d. Other (specify).
   e. Will not be tested.

APPENDIX E (continued)

4. If a written test will be given, do the students know that they will be tested?

   a. Yes
   b. No
   c. Will not be tested.

5. If a written test will be given, when will it be given?

   a. Tomorrow.
   b. Next week.
   c. At the end of the semester.
   d. Other time.

6. Please rate the appropriateness of the reading material used in this activity for the strongest readers in your class.

1	2	3	4	5	6	7
Very Difficult			Just Right			Very Easy

1	2	3	4	5	6	7
Very Boring			Tolerable			Very Interesting

7. Please rate the same material for the weakest readers in your class.

1	2	3	4	5	6	7
Very Difficult			Just Right			Very Easy

1	2	3	4	5	6	7
Very Boring			Tolerable			Very Interesting

APPENDIX F

Suggested Revision of Reading Center Observation Form

Title, Author, Edition, Publisher	Type of Material	Type of Selection
	1. Textbooks a. reading b. english/language c. social studies d. science e. mathematics f. home economics g. shop h. health i. gym j. art k. music l. foreign language 2. Workbooks a-l as above 3. Nontext Books a-i as above j. biography k. travel l. sports m. cooking/food 4. Fiction books a. novels--general b. stories--single c. short stories--collections d. science fiction e. mystery 5. Reference materials a. encyclopedia b. dictionary c. phone book d. catalogue e. other (thesaurus, almanac, etc.) 6. Periodicals a. magazines b. newspapers c. newsletters d. comic books 7. Pamphlets a. product advertising/promotion b. consumer information c. organization information/ promotional d. tourist information/promotional e. medical/health/family f. safety g. occupational/career	Skill lessons decoding comprehension spelling grammar penmanship composition Prose narrative story factual selection essay play Poetry 8. Other a. letters/memos b. student papers c. ditto sheet d. cards e. bulletin boards f. chalkboard g. assembly instructions h. product labels i. road maps j. charts/diagrams/ graphs k. musical scores l. films/slides m. filmstrips n. audio tapes with text o. other

Figure Captions

Figure 1. Preliminary observation form with glossary.

Figure 2. The current observation form with glossary.

OBSERVATION NUMBER	INITIATOR	ACTIVITY OF INITIATOR	LEVEL OF TEXT	LOCATION (SOURCE) OF TEXT	RESPONDERS	ACTIVITY OF RESPONDERS	LEVEL OF TEXT	LOCATION (SOURCE) OF TEXT	DURATION
	teacher teacher-aid workbook ditto sheet student student and tutor	reads-aloud says assigns asks explains corrects instructs points writes shows listens inspects	letter sound short vs. long vs. beg. C sentence question paragraph story chapter book	notebook teacher's guide workbook chart chalkboard book	class class and I.T. # students # students and I.T.	describe identify think about look for read aloud read silently say point find tell me	letter sound short vs. long vs. beg. sound sentence question paragraph story chapter book	book workbook ditto sheet magazine newspaper (child's experience) (blank paper)	

Rules:
1. Activities can be compounded: a) if one text is specified, and both activities relate to it, b) if two texts are specified, and first text related to first activity.
2. If initiator's text and responder's texts match exactly (level and source), only responder's text is specified.
3. Activities may be compounded if: a) they occur simultaneously, b) they are repeated closely associated and fixed order.
4. Nestings are represented by successive level of text, source of text pairs (where the first pair is nested in the second pair).

Teacher_____ Grade Level_____ Class Size_____ School_____ Date_____ Observer_____

1	2	3	4	5	6	7	8	9	10
OBSERVATION NUMBER	ACTOR	DOES	LEVEL OF DISCOURSE	LOCATION OR SOURCE OF DISCOURSE	TYPE OF MATERIAL	TYPE OF SELECTION	TYPE OF INSTRUCTION	DURATION	COMMENTS
	a. T (teacher) b. #S (number of students) c. #S w/I.T. (number of students with individual turns) d. C (class) e. C w/I.T. f. T & #S (teacher and students simultaneously) g. T & C h. other	read read aloud read (silently) sound out write copy correct spell draw fill in circle listen say tells ask answer explain correct identify describe define recall discuss assign introduce think up locate pick up look for look up look at points to match other	graphic representation picture diagram chart graph letters and/or sounds letter names letter sounds vowel-consonant discrimination long, short vs. beginning, and/or ending sounds letter and/or sound combinations vowel combinations consonant blends syllables word building word segments words word meaning pronunciation spelling synonyms antonyms homonyms roots prefix-suffix word combinations phrases clauses rules sentences questions outline paragraph passage story song	picture book (name) workbook (name) ditto sheet (name) word list wall chart cards game (name) book (name) audio tape (name) film strip (name) film (name) magazine (name) newspaper (name) chalkboard oral blank paper comprehension skills comprehension questions main idea sequence outline writing skills punctuation capitalization paragraphs grammar verb tense subject-predicate parts of speech singular-plural agreement style metaphor simile other	reader reading workbook math book math workbook spelling workbook language arts book language arts workbook social studies book social studies workbook science book science workbook health book health workbook novel biography short story anthology informational dictionary encyclopedia other	skill lessons decoding comprehension narrative story factual selection poem play essay song other	a. direct teacher instruction b. teacher initiated and monitored activity c. teacher initiated but not monitored activity d. student initiated independent work e. homework assignment		

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